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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,665	11/15/2001	Peter Lohberg	AP9641	6599
10291	7590	05/10/2005	EXAMINER	
RADER, FISHMAN & GRAUER PLLC 39533 WOODWARD AVENUE SUITE 140 BLOOMFIELD HILLS, MI 48304-0610			PATIDAR, JAY M	
			ART UNIT	PAPER NUMBER
			2862	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/980,665	Applicant(s) PETER LOHBERG	
	Examiner Jay M. Patidar	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16 and 18-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16 and 18-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This communication is in response to applicant's amendment received on February 28, 2005.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The first housing containing only a magneto-electric converter as set forth in claim 16 is nowhere found in the specification.

3. Claims 22,24 are objected to because of the following informalities:

In claim 22 line 5, the term "between" should be ---among---; the same applies to claim 24 at line 6.

Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16,18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loreck et al. in view of Lohberg (DE 196 20 582).

As to claims 16,22,24, Loreck discloses a sensor arrangement with a first housing 12 for the accommodation of at least one converter element, a second housing 13 for a signal processing unit; at least 4-pole connection (14) between the first and the second housing and the second housing includes a pod for a control device and the signal processing circuit in the second housing outputs the signal related to the speed of the encoder (Note Fig. 4a). Loreck teaches to have some circuits in a first housing and some circuits in a second housing (col. 4, lines 53+). Applicant also admits in para 0025 that the first housing may contain some circuits with a magnetic field sensor. Therefore, applicant admits that some circuits can be mounted in the first housing. Loreck discloses a magnet that is used as a biasing magnet (Note corresponding US patent 6,339,322) at col. 1, lines 31+ that is magnetically coupled to a magnetic encoder arranged in a sidewall of a magnetized tire (Col. 5, lines 9+) wherein the sensor is being used to determine the wheel speed. The encoder generates sinusoidal signal in the sensing element because of its poles and the speed can be determined from the frequency of the sinusoidal signal (col. 1, lines 11+ in Loreck). The use of this type of sensor for measuring dynamic deformation of an air gap between the

sensor and an encoder is already known in the art as disclosed by Lohberg in DE '582 (Note in specification, paras # 0003,0008,0009 and e.g. DE 196 20 581). Lohberg teaches to use such sensor for rotational behavior of a vehicle wheel wherein the air gap between the sensor and the encoder is measured by measuring the amplitude of the output signal from the sensing device. Torsion of the side wall of the tire can also be determined from such output signal (note para 0004 of the specification). Consequently, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Loreck to measure air gap between the sensor and the encoder as taught by Lohberg to measure the deformation of the tire.

As to claim 18, Loreck discloses a first pin k4 or k3 providing a signal output from the sensor to a control unit and a second pin k5 providing an operating voltage to the sensor (Note Fig. 1).

As to claims 19,20, encoder is a permanent magnet type or ferromagnetic type encoder (col. 5, lines 9+).

As to claims 21,23,25, the wheel speed and dynamic deformation of an air gap can be found from the output signals generated by Loreck (col. 3, lines 6+) and Lohberg (Note pages 1-2 of the specification).

5. Applicant's arguments filed on February 28, 2005 have been fully considered but they are not persuasive.

Applicant argues that a first housing contains only a magnetic field sensor. This is nowhere found in the specification. In para 0025 of the specification that the first housing can contain other circuits with the magnetic field sensor. Applicant also argues that such arrangement provides greater isolation and less electromagnetic interference within the electrical components of the electronic signal processing circuit. This is also not found in the specification. The mounting of the only sensing device in the first housing is not the inventive concept. If an artisan knows that the electromagnetic interference disturbs the signal processing circuit, the artisan would mount such circuit away from the interference i.e. remote from the encoder or in the second housing. Examiner also notices that the signal processing circuit is either digital or ICs form as shown in figure 2, it is unclear as to how an encoder would interfere with the digital components. Loreck teaches that the first housing contains some circuits while the second housing also contains some circuits. The mounting of such circuits either in the first housing or second housing would be within the level of ordinary skill in the art.

With respect to claim 22, the encoder generates a sinusoidal signal in the sensing device because of its north and south poles. The frequency of such

signal is used to determine the speed of the encoder. Such signal is used to control the brake system (Note first para of BACKGROUND OF THE INVENTION of Loreck). The amplitude of the such signal is used to determine the gap between the sensor and the encoder (Note paras 8-9 of the specification).

With respect to claim 24, torsion of the side wall of the tire can be determined from such output signal from the sensor (note para 0004 of the specification).

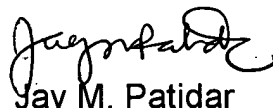
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay M. Patidar whose telephone number is 571-272-2265. The examiner can normally be reached on M-Thur 7:00-5:30.

The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronics Business Center (EBC) at 866-217-9197.


Jay M. Patidar
Primary Examiner
AU 2862
May 3, 2005